

Title (en)

A COMMUNICATION UNIT FOR SOFT-DECISION DEMODULATION AND METHOD THEREFOR

Title (de)

KOMMUNIKATIONSEINHEIT ZUR DEMODULATION MIT WEICHEN ENTSCHEIDUNGEN UND VERFAHREN DAFÜR

Title (fr)

UNITÉ DE COMMUNICATION POUR DÉMODULATION À DÉCISION PONDÉRÉE ET SON PROCÉDÉ

Publication

EP 4176573 A1 20230510 (EN)

Application

EP 21743421 A 20210709

Priority

- GB 202010773 A 20200713
- GB 202104419 A 20210329
- EP 2021069168 W 20210709

Abstract (en)

[origin: GB2597119A] A communication unit for performing soft-decision demodulation comprising a receiver is described. The receiver is arranged to receive a transmitted signal conveying a first set of bits comprising k bits that has been selected from a set of 2^k possible signals. The receiver comprises: a demodulator 118 comprising a bank of 2^k correlators and configured to: detect a transmission of each possible transmitted signal, and output 2^k magnitudes of correlator outputs 109, based on the detected possible transmitted signals, by the bank of 2^k correlators as a first set of inputs. The receiver also comprises a de-mapper circuit 907 coupled to the demodulator and configured to receive the first set of inputs; determine statistics derived from a plurality of aggregated correlator output magnitude distributions of the first set of inputs, wherein the plurality of aggregated correlator output magnitude distributions is fewer than 2^{2k} ; and calculate therefrom and output a first set of a posteriori soft bits comprising k soft bits. In this manner, high quality soft-decisions can be obtained in a robust and practical manner, which is not dependent on and sensitive to an excessive number of correlator output magnitude distributions.

IPC 8 full level

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See references of WO 2022013097A1

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